

## CLAIMS

What is claimed is:

1. In a server device, a method for processing an encoded data  
5 stream wherein said encoded data stream is non-preemptable and subject to  
precedence constraints, said method comprising the steps of:
- a) assigning a processor setting to a task in a plurality of tasks, wherein  
said processor setting corresponds to a setting used by a processor of a client  
device to execute said task and wherein said task decodes without preemption  
10 a frame of said encoded data stream;
- b) generating an execution schedule for decoding said encoded data  
stream, wherein said execution schedule comprises a sequence for executing  
at said client device said plurality of tasks according to said precedence  
constraints; and  
15 c) transmitting to said client device said execution schedule and said  
processor setting.
2. The method as recited in Claim 1 wherein said processor setting  
comprises a voltage amount used by said processor to execute said task.  
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3. The method as recited in Claim 1 wherein said processor setting  
comprises a processor clock speed at which said processor executes said task.

4. The method as recited in Claim 1 wherein said processor of said client device operates using a discrete variable-voltage power supply.

5. The method as recited in Claim 1 wherein said encoded data stream comprises an audio portion and a video portion.

6. The method as recited in Claim 1 comprising the steps of:  
assigning a processor setting to each task in said plurality of tasks; and  
transmitting said processor setting for said each task to said client device.

7. The method as recited in Claim 1 wherein said step of generating said execution schedule is independent of client device type.

8. The method as recited in Claim 1 wherein said step of generating said execution schedule comprises the steps of:

generating different sequences for executing a subset of said plurality of tasks; and

selecting a sequence that results in minimum energy use by said processor of said client device.

9. The method as recited in Claim 1 comprising the step of:  
transmitting said encoded data stream to said client device with said  
execution schedule and said processor setting.

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10. A computer system comprising:

a bus;

a memory unit coupled to said bus;

a communication interface coupled to bus and operable to establish a

10 communication link with a client device; and

a processor coupled to said bus, said processor for executing a method  
for processing an encoded data stream wherein said encoded data stream is  
non-preemptable and subject to precedence constraints, said method  
comprising the steps of:

15 a) assigning a processor setting to a task in a plurality of tasks, wherein  
said processor setting corresponds to a setting used by a processor of said  
client device to execute said task and wherein said task decodes without  
preemption a frame of said encoded data stream;

20 b) generating an execution schedule for decoding said encoded data  
stream, wherein said execution schedule comprises a sequence for executing  
at said client device said plurality of tasks according to said precedence  
constraints; and

c) transmitting to said client device said execution schedule and said processor setting.

11. The computer system of Claim 10 wherein said processor setting  
5 comprises a voltage amount used by said processor of said client device to execute said task.

12. The computer system of Claim 10 wherein said processor setting  
10 comprises a processor clock speed at which said processor of said client device executes said task.

13. The computer system of Claim 10 wherein said processor of said client device operates using a discrete variable-voltage power supply.

14. The computer system of Claim 10 wherein said encoded data  
15 stream comprises an audio portion and a video portion.

15. The computer system of Claim 10 wherein said method comprises the steps of:  
20 assigning a processor setting to each task in said plurality of tasks; and transmitting said processor setting for said each task to said client device.

16. The computer system of Claim 10 wherein said step of generating said execution schedule is independent of client device type.

5 17. The computer system of Claim 10 wherein said step b) of said method comprises the steps of:  
generating different sequences for executing a subset of said plurality of tasks; and

10 selecting a sequence that results in minimum energy use by said processor of said client device.

18. The computer system of Claim 10 wherein said method comprises the step of:

15 transmitting said encoded data stream to said client device with said execution schedule and said processor setting.

19. A computer-usable medium having computer-readable program code embodied therein for causing a computer system to perform the steps of:

20 a) assigning a processor setting to a task in a plurality of tasks, wherein said processor setting corresponds to a setting used by a processor of a client device to execute said task and wherein said task decodes without preemption a frame of said encoded data stream;

b) generating an execution schedule for decoding said encoded data stream, wherein said execution schedule comprises a sequence for executing at said client device said plurality of tasks according to said precedence constraints; and

5 c) transmitting to said client device said execution schedule and said processor setting.

10 20. The computer-usable medium of Claim 19 wherein said processor setting comprises a voltage amount used by said processor to execute said task.

15 21. The computer-usable medium of Claim 19 wherein said processor setting comprises a processor clock speed at which said processor executes said task.

22. The computer-usable medium of Claim 19 wherein said processor of said client device operates using a discrete variable-voltage power supply.

20 23. The computer-usable medium of Claim 19 wherein said encoded data stream comprises an audio portion and a video portion.

24. The computer-usable medium of Claim 19 wherein said computer-readable program code embodied therein causes a computer system to perform the steps of:

assigning a processor setting to each task in said plurality of tasks; and  
5 transmitting said processor setting for said each task to said client device.

25. The computer-usable medium of Claim 19 wherein said step of generating said execution schedule is independent of client device type.

26. The computer-usable medium of Claim 19 wherein said computer-readable program code embodied therein causes a computer system to perform the steps of:

generating different sequences for executing a subset of said plurality of  
15 tasks; and

selecting a sequence that results in minimum energy use by said processor of said client device.

27. The computer-usable medium of Claim 19 wherein said computer-readable program code embodied therein causes a computer system to perform the step of:

transmitting said encoded data stream to said client device with said execution schedule and said processor setting.

28. In a client device, a method for decoding an encoded data stream,  
5 said method comprising the steps of:

a) receiving said encoded data stream, wherein said encoded data stream is non-preemptable and subject to precedence constraints;

b) receiving an execution schedule for decoding said encoded data stream, wherein said execution schedule comprises a sequence for executing a  
10 plurality of tasks according to said precedence constraints, wherein a task decodes without preemption a frame of said encoded data stream; and

c) receiving a processor setting for each task in said plurality of tasks, wherein said processor setting specifies a setting used by a processor of said client device to execute a respective task.

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29. The method as recited in Claim 28 wherein said processor setting comprises a voltage amount used by said processor of said client device to execute said task.

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30. The method as recited in Claim 28 wherein said processor setting comprises a processor clock speed at which said processor of said client device executes said task.



31. The method as recited in Claim 28 wherein said processor of said client device operates using a discrete variable-voltage power supply.

5 32. The method as recited in Claim 28 wherein said encoded data stream comprises an audio portion and a video portion.

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